

Ceratum divergens, Claparède and Lachmann.

Peridineum Michælais, Ehrenberg.

P. acuminatum, Ehrenberg.

Dinophysis norwegiana, Claparède and Lachmann.

There are also "resting-spores" of *Peridinea* in reticulated cases and some empty shells of *Tintinnus*.—E. L. M.

On the Annelids of the British North-Polar Expedition.

By W. C. M'INTOSH, M.D., LL.D., F.R.S., F.L.S.

[Read November 15, 1877.]

CAPTAIN FEILDEN, one of the naturalists of the late Arctic Expedition under Sir George Nares, kindly placed in my hands a small collection of Annelids dredged between latitudes 79° and 82° 30' N. In glancing over the twenty forms in this collection it is found that eight species (or forty per cent.) are not mentioned in the paper (recently communicated to the Society) on the Annelids procured by Dr. Gwyn Jeffreys, F.R.S., when dredging in H.M.S. 'Valorous' in Davis Strait. Two of these, however, are known to inhabit the Gulf of St. Lawrence, where they were lately dredged by Mr. Whiteaves. No species new to science is present; and, with one exception, all have been previously entered in the catalogue of the Greenlandic fauna*.

The majority of the species represented in the collection have a very wide range in northern waters, many being common to the British seas and the shores of the North Atlantic generally, and on the American side stretching from the Gulf of St. Lawrence north-eastward to the polar ice beyond Smith's Sound. With two exceptions all the species occur in the seas of Spitzbergen, and one of these is Icelandic, while the second is a somewhat doubtful form. This distribution is therefore clearly marked; but it is well to bear in mind that the Annelids of the North-American shores have been only partially investigated, and that a critical revision, by one familiar with North-European forms, of what has been accomplished in this respect is yet a desideratum. On the whole, the circumpolar Annelidan fauna would appear to present considerable uniformity in regard to species.

* Arctic Manual, 1875.

The appearance and size of the specimens afford good grounds for believing that many species, genera, and families yet remain to be discovered in these high polar latitudes. The large size of the Polynoidæ and the abundance of *Loxosomæ** on their scales and other parts are features of interest. The occurrence also of a considerable quantity of the tubes and bodies of a species of *Sabella* in the stomach of the Great Seal (*Phoca barbata*, Fabr.) adds another instance to the list of cases in which Annelids are eaten by the higher animals. The stomach of the same Seal further contained, besides the spawn of fishes, two examples of *Priapulius caudatus*, Lam., and several curiously coiled cords of ova, which resembled Annelids.

In Dr. Emil Marenzeller's account† (just published) of the Annelids procured by the Austro-Hungarian North-Polar Expedition, under Lieutenants Weyprecht and Payer, 27 species are mentioned. Of these, no less than 18 do not occur in the following list; but no further weight should be put on this than is warranted by the fact that only a few of the abundant forms which have a wide circumpolar range had been obtained in either case. Many of the 18, indeed, occur on the Canadian coast, and extend northwards to Davis Strait. On the other hand, about half the species (11) in the English Expedition do not appear in the Austro-Hungarian. Three of the species in the latter list do not occur in the catalogue in the 'Arctic Manual' (1875), and a fourth forms a new genus. They were procured between 74° and 79° N. lat. The species common to both Expeditions are indicated in the table at the end; those characteristic of the Austro-Hungarian Expedition are:—*Eucrante villosa*, Mgrn.; *Nephtys longisetosa*, CErst.; ? *Phyllodoce Luetkeni*, Mgrn.; *Syllis fasciata*, Mgrn.; *Nereis pelagica*, L.; *Nothria conchylega*, Sars; *Glycera capitata*, CErst.; *Scalibregma inflatum*, H. Rathke; *Brada villosa*, ibid.; *Ampharete Goësi*, Mgrn.; *Amphicteis Gunneri*, Sars; *Melinna cristata*, Sars; *Amphitrite cirrata*, O. F. Müller; *Terebellides Stroemi*, Sars; *Euchone tuberculosa*, Kröyer; *Chone Duneri*, Mgrn.; *Spirorbis lucidus*, Mont.; and *Hyalopomatus Claparedii*, Marenzeller.

* Prof. Busk and the Rev. T. Hincks are at present engaged with these curious forms.

† "Die Cœlenteraten, Echinodermen und Würmer der k.-k. österreichisch-ungarischen Nordpol-Expedition," &c., Bd. xxxv. der Denkschriften der math.-naturwiss. Classe der k. Akad. der Wissenschaften, 1877.

Fig. 1.



SKETCH MAP showing route of the late Arctic Expedition.

Fam. POLYNOIDE.

✓ *NYCHIA CIRROSA*, Pallas*.

Fragment of a large example from Cape Frazer, Grinnell Land, 79° 44' N. lat., in 20 fathoms, on stony ground. Two specimens from Station No. 29 have the dorsal bristles covered with an ochreous investment, amongst which are many Infusoria.

This species is common in Britain, Scandinavia, Iceland, Spitzbergen, and Greenland.

✓ *EUNOA CERSTEDI*, Malmgren.

A fine specimen from Franklin-Pierce Bay, Grinnell Land, at a depth of 15 fathoms, in 79° 25' N. lat. Bottom-temperature 29°·50. *Tubulipora* and *Halisarca* occur on the scales.

The length of the example is about 78 millims., and breadth 25 millims. The species is not uncommon in the Gulf of St. Lawrence, and ranges northward to Greenland, to Spitzbergen, Iceland, and Finmark.

✓ *EUNOA NODOSA*, Sars.

A large example from Cape Louis Napoleon, Grinnell Land, lat. 79° 38' N., in 25 fathoms; bottom-temperature 29°·2. A small *Tubulipora* and many Foraminifera are attached to the scales.

E. nodosa ranges from Britain to Finmark and Spitzbergen, and from the Gulf of St. Lawrence to Greenland.

✓ *LAGISCA BARISPINA*, Sars.

An adult form (with smoother scales), measuring 55 millims. in length and 17 in total breadth, from Cape Napoleon, 25 fathoms; and a small variety, with more numerous cilia on the scales, from Franklin-Pierce Bay, in 15 fathoms. Numerous *Loxosomæ* are attached to the scales of the former. The eyes in the smaller form are larger and the tips of the bristles slightly differ.

Widely distributed in northern waters from Norway to Iceland and Spitzbergen, and from the Gulf of St. Lawrence to Greenland.

✓ *HARMOTHOË IMBRICATA*, L.

A large specimen from Floeberg Beach (the winter-quarters of H.M.S. 'Alert'), 82° 27' N. lat.; smaller forms from Bessels Bay, 81° 7' N. lat., in 7½ fathoms, and from Station No. 29.

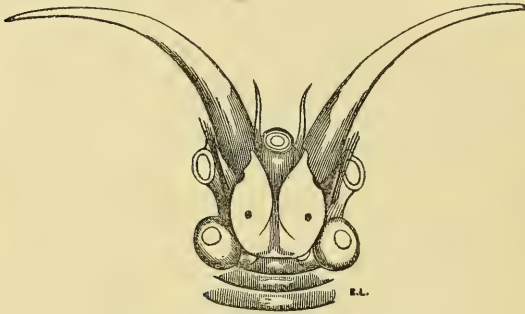
* The arrangement and synonymy of Dr. Malmgren (*Annulata Polychæta*, &c., 1867) is followed. Special reference to authorities is therefore unnecessary.

One example had the same whitish tubercles (containing granules) in its skin as observed in *Nychia cirrosa* of the 'Valorous'*. Abundant in all northern waters.

ANTINOË SARSI, *Kinberg*,? var. GRËNLANDICA, *Mgrn.*

A large example, 50 millims. in length and about 20 in total breadth, from Discovery Bay (the winter-quarters of H.M.S. 'Discovery'), in 81° 44' N. lat.

Fig. 2.



Head of *Antinoë Sarsi*, slightly magnified.

The head of this specimen (fig. 2) differs from the ordinary form in having the posterior pair of eyes in a line passing transversely across the middle of the head, and therefore advanced to an unusual degree. The anterior pair are placed laterally, a little behind the anterior prominence. The dorsal bristles are very long, much longer than in *Malmgren's* figure, indeed they project outward as far as the ventral.

A *Loxosoma* occurred on the feet; and on the same parts a parasitic Infusorial form covered the cuticle and the bristles with a minute down, rising here and there on the former into little elevated tufts, and evidently flourishing in great profusion.

A. Sarsi in its ordinary form occurs in the Baltic, at Spitzbergen, Finmark, and from the Gulf of St. Lawrence northwards to Greenland.

Fam. PHYLLODOCIDÆ.

PHYLLODOCE GRËNLANDICA, *Ørsted.*

Two specimens of average size were collected in Franklin-Pierce

* *Proceed. R. S.* vol. xxv. No. 173, p. 216.

Bay by Mr. H. C. Hart; others come from Cape Frazer in 30 fathoms (mud), Discovery Bay in 5 fathoms, and in 35 fathoms at Hayes Point.

Ranges from Britain to Finmark, Spitzbergen, Gulf of St. Lawrence, Greenland, and probably in most northern seas.

AUTOLYTUS LONGISETOSUS, *Erst.*

On a muddy bottom in 11 fathoms in 81° 44' N. lat.

All are sexual forms (males), and the beautiful iridescence of their long bristles is striking. O. Fabricius* named the same form *Nereis prismatica*; and he found them for the most part in masses of a yellow fœtid sponge.

The species ranges from Greenland to Spitzbergen.

Fam. NEREIDÆ.

NEREIS ZONATA, *Malmgren.*

Dredged in 15 fathoms, Franklin-Pierce Bay; bottom-temperature 29°·50.

Not uncommon at Spitzbergen and Greenland.

Fam. LUMBRINEREIDÆ.

LUMBRICONEREIS FRAGILIS, *O. F. Müller.*

A specimen of considerable size (about 9 millims. in diameter) from Discovery Bay, in 5 fathoms.

Abundant in all northern waters.

Fam. SCALIBREGMIDÆ.

EUMENIA CRASSA, *Ersted.*

A full-grown example from Cape Frazer, on stony ground, in 20 fathoms.

Ranges from Britain to Scandinavia, to Spitzbergen and Greenland.

Fam. HALELMINTHIDÆ.

CAPITELLA CAPITATA, *Fabr.*

A fragment from Discovery Bay.

Generally distributed in the northern seas.

Fam. AMPHICTENIDÆ.

CISTENIDES GRANULATA, *L.*

From Discovery Bay.

* 'Fauna Grœnlandica,' p. 302.

The tubes are for the most part composed of the same quartzose sand as in the examples from the 'Valorous.' The specimens are rather small, the longest tube being 41 millims. in length, and 7 millims. in diameter at the anterior end.

Not uncommon at Iceland and Greenland.

Fam. AMPHARETIDÆ.

AMPHICTEIS SUNDEVALLI, *Malmgren*.

A very fine example (measuring 42 millims. in length and 11 in breadth) from Discovery Bay, in 5 fathoms.

This agrees with Malmgren's description in having 19 segments with pinnules in the posterior region of the body. The bristles are rather more crenated, and their shafts more distinctly striated than in *Amphicteis Gunneri*, Sars; but the most characteristic difference appears in the hooks, which certainly diverge in a noteworthy degree.

This species has hitherto been procured only on the eastern shores of Spitzbergen, on a clayey bottom.

Fam. TERESELLIDÆ.

SCIONE LOBATA, *Malmgren*.

From Franklin-Pierce Bay, collected by Mr. W. C. Hart. In tubes composed of coarse chitinous secretion, with adherent sand-particles, Foraminifera, and other minute organisms.

Not rare at Spitzbergen and Greenland.

AXIONICE FLEXUOSA, *Grube*. (Fig. 3.)

From Floeberg Beach in 10½ fathoms. A single specimen in a somewhat friable flattened tube, composed of chitinous secretion and quartzose sand. The regular curves of the tubes are remarkable.

Common on the shores of Spitzbergen and Greenland.

THELEPUS CIRCINNATUS, *Fabr*.

A fragment from Cape Frazer in 20 fathoms, on stony ground.

Everywhere common in the northern seas.

Fig. 3.



Axionice flexuosa, Grube, in tube, enlarged.

Fam. SABELLIDÆ.

? *SABELLA SPETSBERGENSIS*, *Malmgren*.

From Franklin-Pierce Bay, in 13–15 fathoms, on a stony bottom (Mr. W. C. Hart). The absence of the branchiæ renders accurate diagnosis difficult.

This form also occurs in considerable quantity from the stomach of *Phoca barbata*, Fabr.

EUCHONE ANALIS, *Kröyer*.

From Discovery Bay, lat. 81° 41' N.

In tubes of particles of quartz, fragments of shells, and spines of *Echini*, with sand-grains and secretion.

Not uncommon on the shores of the North Atlantic—from Britain to Scandinavia, Spitzbergen, and Greenland.

CHONE INFUNDIBULIFORMIS, *Kröyer*.

From Discovery Bay. The specimen is of medium size and in the ordinary chitinous tube.

Occurs in Britain, Finmark, Spitzbergen, and on the American side from the Gulf of St. Lawrence to Greenland.

Fam. LUMBRICIDÆ.

CLITELLIO ARENARIUS, *O. F. Müller**

Specimens were found clinging to roots of *Laminariæ* in 82° 30' N. lat.

This species does not appear to have been rediscovered since *O. Fabricius* described it.

NEMERTINEA ANOPLA.

Fam. LINEIDÆ.

Two examples, apparently the *Planaria fusca* of *Fabricius* †, come from Franklin-Pierce Bay, in 15 fathoms. Bottom-temperature 29°·50. The appearance of the specimens and the structure of the proboscis (which is very well shown) make it probable that the species indicated by *Fabricius* is very closely related to *Micrura fusca*, *McI.* ‡ The styliform process at the tail may have been overlooked.

* *O. Fabricius*, 'Fauna Grœnlandica,' p. 280.

† 'Fauna Grœnlandica,' p. 324.

‡ *Brit. Nemerteans*, *Ray Soc*, p. 196.

	N. lat.	Bottom-temperature.	Depth in fathoms.	Bottom.	Austro-Hungarian Exped.	European.	North-American.
<i>Nychia cirrosa</i> , <i>Pall.</i>	79° 44'	...	20	stones.	*	*	*
	81° 44'	29°-0					
<i>Eunoa CErstedii</i> , <i>Mgrn.</i>	79° 25'	29°-50	15	...	...	*	*
<i>Eunoa nodosa</i> , <i>Sars</i>	79° 38'	29°-2	25	...	...	*	*
<i>Lagisca rarispina</i> , <i>Sars</i> ...	79° 38'	...	25				
	79° 29'	...	15	...	...	*	*
	79° 25'	29°-50	15				
<i>Harmothoë imbricata</i> , <i>L.</i> ...	81° 7'	...	7½	...	...	*	*
	81° 44'	...					
<i>Antinoë Sarsi</i> , <i>Kbg.</i>	81° 44'	...	...	...	*	*	*
	79° 29'	...	...	...	*	*	*
<i>Phyllodoce grœnlandica</i> , <i>Erst.</i>	79° 44'	...	30	mud.	...	*	*
	79° 40'	...	35				
	81° 44'	...	5				
<i>Autolytus longisetosus</i>	81° 44'	...	...	...	...	*	*
<i>Nereis zonata</i> , <i>Mgrn.</i>	79° 29'	29°-50	15	...	*	*	*
<i>Lumbiconereis fragilis</i> , <i>O. F. Müller</i>	81° 44'	...	5	...	...	*	*
<i>Eumenia crassa</i> , <i>Erst.</i>	79° 44'	...	20	stones.	...	*	*
<i>Capitella capitata</i> , <i>Fabr.</i>	81° 44'	29°-0	...	...	...	*	*
<i>Cistenides granulata</i> , <i>L.</i>	81° 44'	30°-0	...	...	*	*	*
<i>Amphicteis Sundevalli</i> , <i>Mgrn.</i>	81° 44'	...	5	...	...	*	*
<i>Scione lobata</i> , <i>Mgrn.</i>	79° 29'	...	...	...	*	*	*
<i>Axionice flexuosa</i> , <i>Grube</i>	82° 27'	...	10½	...	...	*	*
<i>Thelepus circinnatus</i> , <i>Fabr.</i>	79° 44'	...	20	stones.	*	*	*
<i>Sabella spetsbergensis</i> , <i>Mgrn.</i>	79° 29'	...	...	...	...	*	*
<i>Euchone analis</i> , <i>Krøyer</i>	81° 41'	29°-0	...	...	...	*	*
<i>Chone infundibuliformis</i> , <i>Krøyer</i>	81° 44'	...	...	...	*	*	*
<i>Lineus fusca</i> , <i>Fabr.</i>	79° 25'	29°-50	15	...	...	*	*
<i>Clitellio arenarius</i>	82° 30'	...	...	...	...	*	*

Report on a Small Collection of Insects obtained by Dr. J. C. Ploem in Java, with a Description of a new Species of *Hoplia*.
By CHARLES O. WATERHOUSE, Esq. Communicated by Dr. J. MURIE, F.L.S.

[Read December 6, 1877.]

[IN March last (1877) Dr. J. C. Ploem, Director in Chief of the Hospital at Sindang-læaja, in the island of Java, kindly forwarded to our Society a small collection of insects made by him in the